Data Science for Health in Africa Workshop

Organizers


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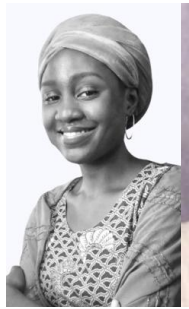
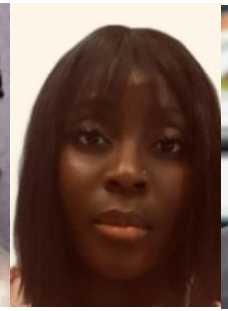
Marvellous Ajala

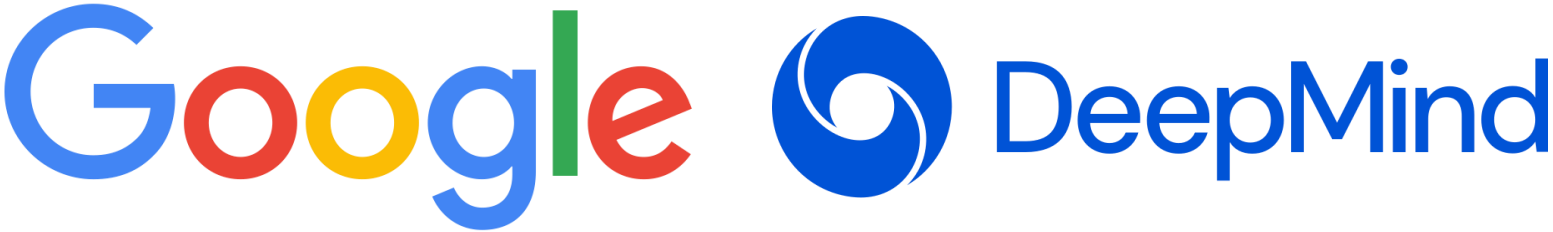

Chinonyelum Igwe


Charles Nimo


Comfort Adesina


Ditiro Rampate

Sponsors



Includes access to A100 GPUs for Ideathon Projects through GCP

Part 1

9.10 - 9.50

Keynote: Prof Michael Best

9.50 - 10.00

Lightning Talks

10.00 -10.50

Panel

10.50 - 11.30

Roundtable Discussion

11.30 Group Photo

Part 2

12.00 -12.50

Tutorial on MedGemma with Google Team

12.50 - 13.00

Ideathon Launch

Part 3

14.30 - 15.30

Design Dash

15.30 - 15.45

Report Back

15.45 - 16.00

Workshop Wrap Up

Prof Michael Best

Dr. Michael Best is Executive Director of the Institute for People and Technology (IPaT) and Professor with the Sam Nunn School of International Affairs and the School of Interactive Computing at Georgia Institute of Technology where he directs the Technologies and International Development Lab. His research explores the promise, and the peril, of information and communication technologies (ICTs) in social, economic, and political development, with a recent focus on low-resource languages. He hopes to create new forms of inclusive innovation, and has particularly sought to build partnerships with researchers and communities in Africa and Asia.

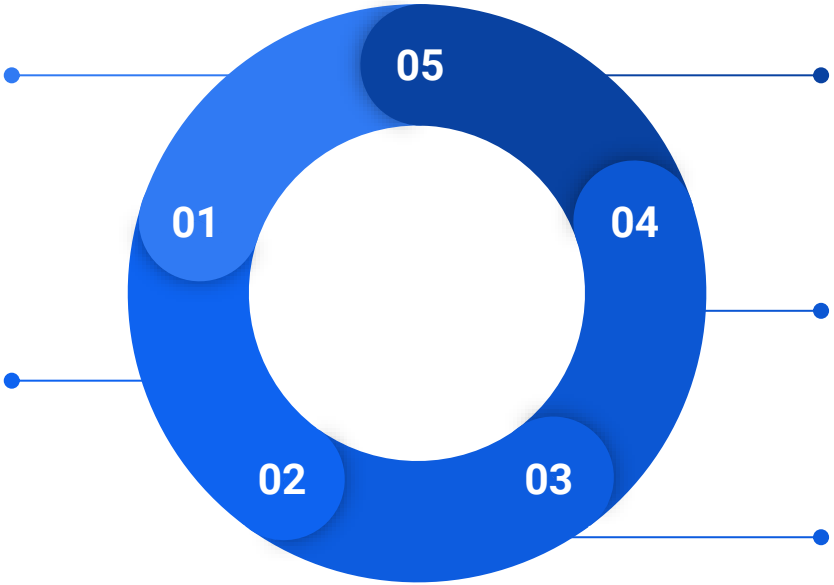
Lightning Talks

Clarity

How the work and its relevance are communicated.

Theme Relevance

Connection to data science and health in Africa



Creativity

Novelty of the idea or approach

Presentation Quality

Slide design and structure

Potential for Impact

Research, policy, or practical value

Ferdaous Idlahcen

When Cells Speak Genes: The First African-Moroccan Ovarian H&E Cohort

Idlahcen et al. DS4Health Africa 2025
When Cells Speak Genes: The First African-Moroccan Ovarian H&E Cohort

Where we're based?

UM6P HOSPITALS-Clinical Department

140	60	120	3MT

DataPathology

"Building African AI, by and for Africa"

Democratizing precision oncology through culturally-relevant, locally developed ai solutions

In Joint With

CITIC-Universidad de Granada

RQ: Identifying the patients with HRD positive vs. negative from WSIs through AI and capture histologic phenotypes associated with mutations, particularly BRCA.

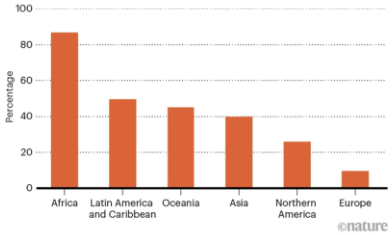
In silico screening or prognostic biomarker.

Herein

- ❑ Multiple Instance Learning -> Higher level
- ❑ Attention -> relevant regions
- ❑ Building on the advancements of patch foundation models, we utilized UNI to enhance our approach.
- ❑ How about the spatial relationship between instances? A proposed smooth operator derived from a Dirichlet energy minimization problem, similar to the work by Zhou and Schölkopf and Zhou et al. for graph neural networks.

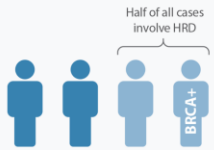
A BUILDING BURDEN

Although the rate of ovarian cancer might be falling in some places, population growth means that the number of people requiring treatment for the disease will increase over the next 20 years.



Although ovarian cancer appears fairly rare in Africa, experts reckon that official records skip vast swathes of individuals and that women, no doubt, die without a diagnosis. [Fiscutean 2021 Nature]

- HRD-positive tumors may be sensitized to PARPi therapy.
- HRD is present in nearly half of all ovarian cancer tumors.[1]
- HRD is often assessed solely on BRCA alterations, however BRCA alterations only account for half of HRD+ cases.[2]
- Non-BRCA causes of HRD include other gene alterations and epigenetic factors.
- **Identifying HRD-positive tumors based on genomic scarring in addition to BRCA alterations results in a more complete assessment of HRD.**



❑ Targeted Therapy

Genetic test is required to find targets

- Not routinely used: time-consuming, cost, limited access to testing, etc.

More biomarkers are needed

- Different types of cancer.
- Need better understanding of DNA changes, proteins, pathways in cancer.

Predict gene mutation and pathway(s) from histopathology images

- Histopathology images are now ubiquitously available
- Explore phenotype-genotype relationships

*sm abmil:

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test/bag/f1:0.9592929292929292
test/bag/prec:1
test/bag/rec:0.9679245283018868

test/auroc:0.9892597968069664
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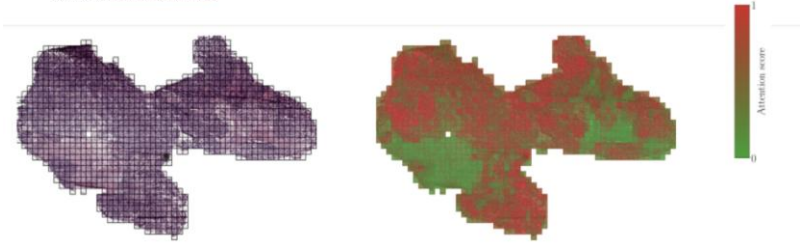

Christopher Mvelase

RL Driven Forecasting by Country and District

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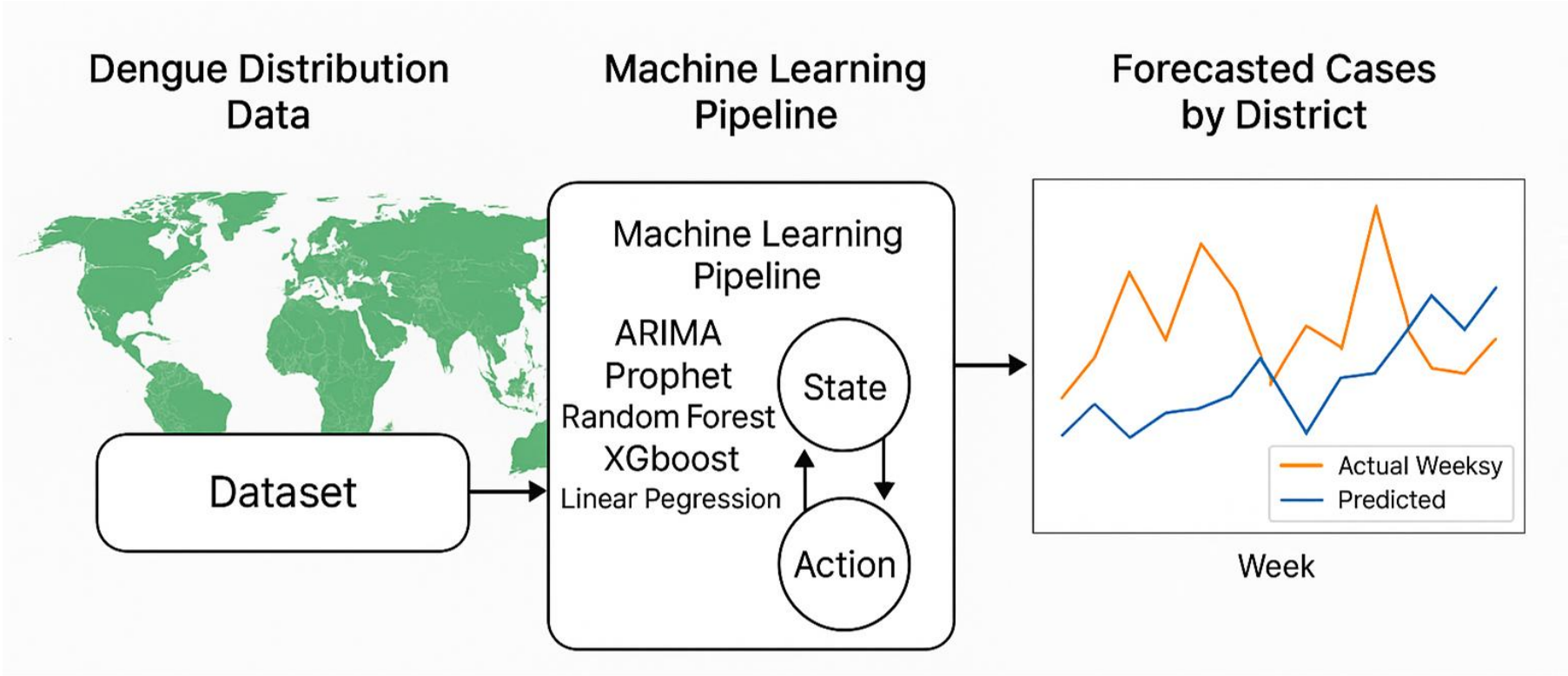
A Reinforcement Learning framework to predict weekly cases by country and district to support data sparse and inconsistent countries.



Sourour Ammar

Towards Privacy-Preserving and Adaptive AI for Healthcare

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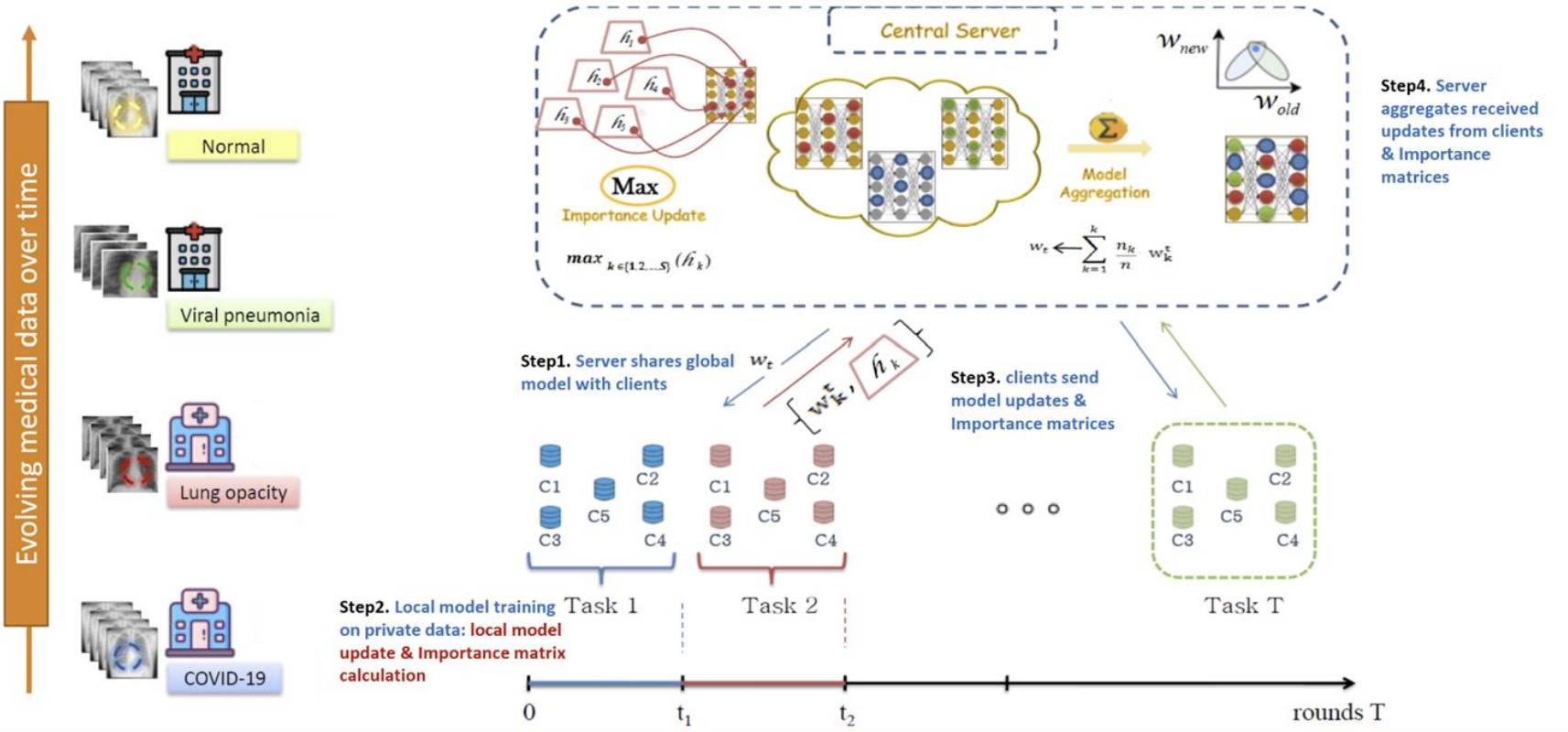


State of AI for Healthcare Research in Africa and the Opportunities for Involvement

Panel Introduction

Michael Best

Rose Nakasi

Arijit Patra

Tobi Olatunji

Jay Patel

Round Table Discussion

Ecosystem Readiness: Building the Foundations for Health AI innovation

AI for Everywhere: Designing Health Solutions for Low Resource Settings

Emerging AI Technologies: Frontier AI Solutions for African Problem Translation

Making AI Work for People: Human-Centered AI Design Encompassing Trust and Language

Scaling AI Solutions: Going from Pilot to Nationwide Impact

WORKSHOP RESUMES
@ 12 pm

WORKSHOP RESUMES
@ 12 pm

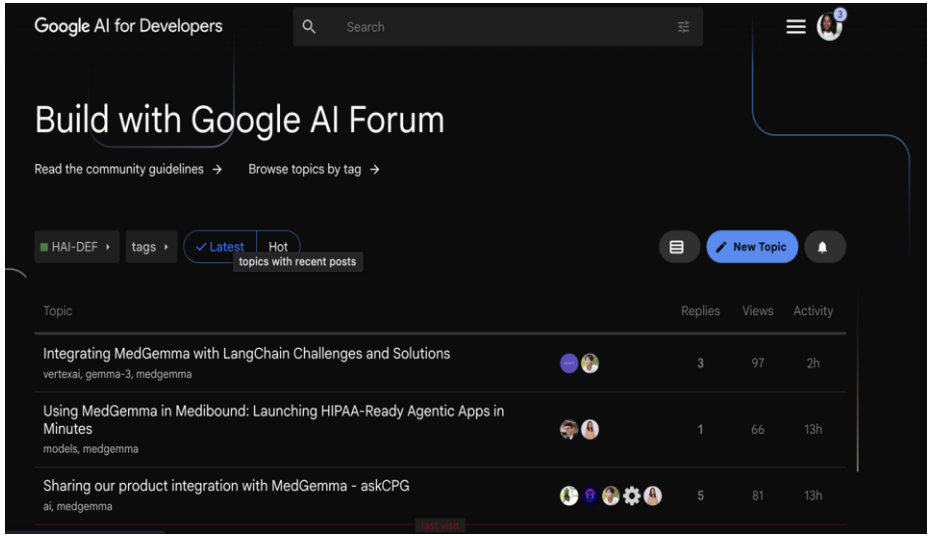
MedGemma Tutorial With Mercy Asiedu and Sekou Remy

Ideathon Introduction

What?

The Ideathon brings together people to form teams and tackle real healthcare problems applying AI. Participants (2-4 per team) will brainstorm, collaborate, and design scalable solutions that combine technical creativity with real-world health impact.

How? - Teams must integrate Google models into the solution - Focus on MedSigLIP, MedGemma and TxGemma.



Ideathon Timeline

Milestone	Timeline
Registration and Launch	Registration pre-indaba through the workshop and closes a day after the workshop. Friday, Aug 22nd
Phase 1	Aug 25th - Aug 30th
Finalists Announced	1–2 days after Phase 1 closes (Sept 1st)
Mentorship Window	Weeks 2–3 (Sept 2nd - Sept 15th)
Final Pitch Day	End of Week 4 (Sept 18th)
1-month check in	Oct 18th, 2025

Boosters

- Mentorship session per team between Phases 1 & 2 from Google technical team.
- Access to Google model documentation or starter resources.
- Access to GCP credits.
- Google Blogpost Feature.
- Access to HAI-DEF/MedGemma Developer Forum.
- Opportunity to carry your project forward beyond the Ideathon with visibility, mentorship, and community support.

→ **$1,200**

→ **$600**

→ **$300**

Additional Recognitions

- Special award: Best proof-of-concept demo for offline/on-device or low connectivity applications
- Audience choice
- Most fun

Pre Register for DS4H Ideathon Here:

WORKSHOP RESUMES @ 2.30 pm

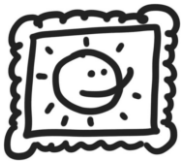
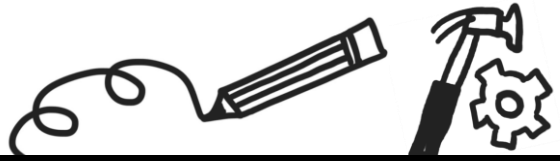
(Everyone back by 2.25 pm will be entered into a raffle for a shirt)

SHIRT RAFFLE

Closes @ 2.28 pm

Design Dash 🤔



a super-fast introduction to design thinking methods & mindsets

WAIT! DON'T OPEN THIS YET!

TEAM MEMBERS (3-5)

Name & Sketch	Name & Sketch	Name & Sketch	Name & Sketch	Name & Sketch

OK, NOW YOU'RE READY.

You're going to REDESIGN...

5 Design Challenges

1. Today, 95% of the global malaria burden is concentrated in sub-Saharan Africa. Design an AI-driven early-warning system to predict malaria outbreaks in Ghana. The system would analyze climate data, mosquito breeding patterns, and community health reports to identify high risk areas before outbreaks occur.

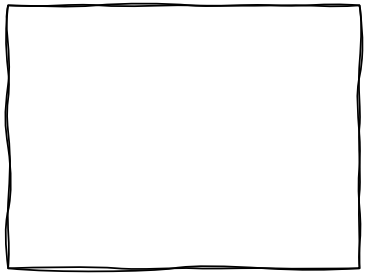
2. Many women live far from clinics, leading to delays that contribute to high maternal mortality. Imagine an AI-powered SMS service that supports pregnant women and new mothers in rural East Africa. The system answers health questions in local languages and provides personalized guidance on pregnancy and newborn care.

3. Create a mobile AI assistant to support community health workers (CHWs) in Rwanda, who visit households in remote areas. The app would help CHWs diagnose and manage common conditions (malaria, pneumonia, malnutrition) with simple prompts, for example, guiding them through symptoms and suggesting referrals.

4. Come up with an AI-based system to help patients stick to longterm treatments for chronic illnesses like HIV or TB (tuberculosis) in Botswana. For example, an app could predict which patients are at risk of falling off their medication and alert health workers to intervene.

5. Design a health information chatbot that works in multiple African languages, for instance, in Nigeria's Yoruba, Hausa, Igbo or Cameroon's French, English and local dialects, to answer common health questions and provide guidance.

Each team member shares 1 way they connect to this topic.



Name & Sketch

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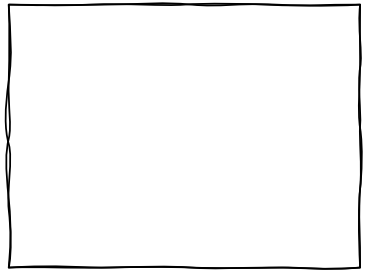

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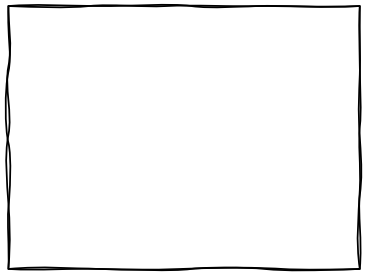

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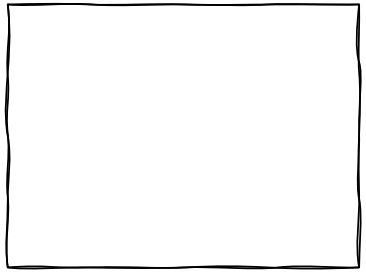

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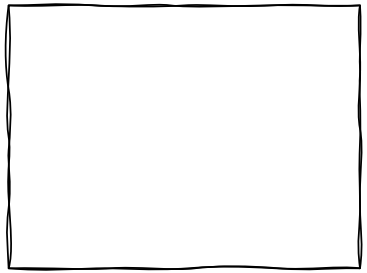

Name & Sketch

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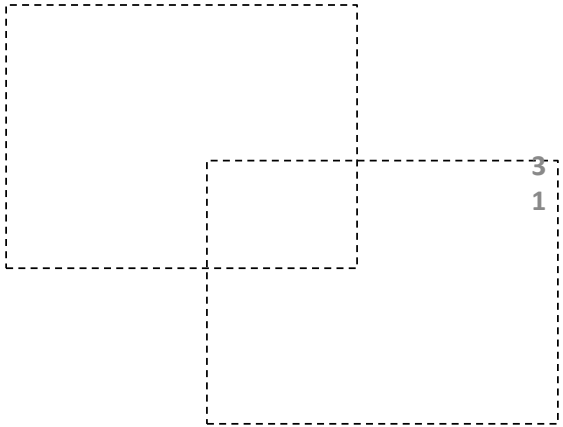
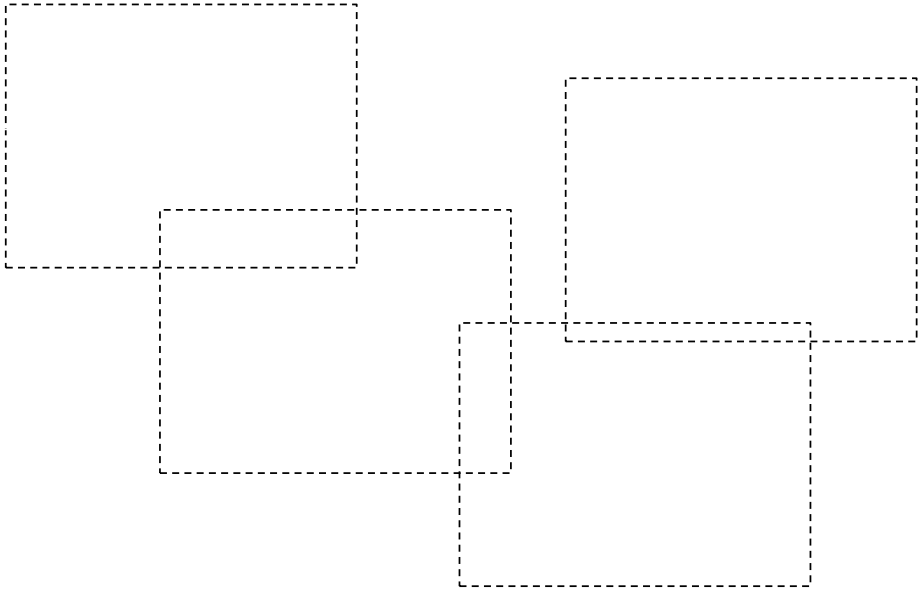
Get to Know Your Team

Interview members from the group about their connection to the topic. Get to know your topic.

NOTES





Conversation Tips

- Ask clarifying questions
- Listen 80% of the time; talk 20% of the time.
- Look for problems, opportunities, pain points, and challenges.
- If you hear something interesting, ask “why?”

Get to Know Your Team

DEFINE your challenge

Use your notes to frame a human-centered design problem.

IDENTIFY THE CONSUMERS

e.g. nurses, The Queen of DIY, The Calendar Wizard

THEY SAY THEY NEED TO

What do they think are the main problems and challenges?

HERE'S WHAT WE THINK IS THE UNDERLYING PROBLEM

What do you see that they don't see?

What's the need behind their need?

Define Your Challenge

Describe an idea

Describe an idea that solves the problem you found.

YOUR CHALLENGE

What do you see that they don't see?

What's the need behind their need?

YOUR SOLUTION

3
5

Describe Your Concept

Report Back – Each Team Share Your Solution

Please scan the QR Code

Feedback Forms

Community Involvement

Community Involvement

SisonkeBiotik

Ro’ya

DS-I Africa

Ideathon Pre-Registration

Sign Up

Hugging Face Models

Discord (Coms and Group Forming)

Wellcome Trust Health AI and Evaluation Session
5pm – 6:30pm


DS-I Africa
Data Science for Health Discovery and Innovation in Africa
SISONKE
BIOTIK